The Early History of the Israeli Internet
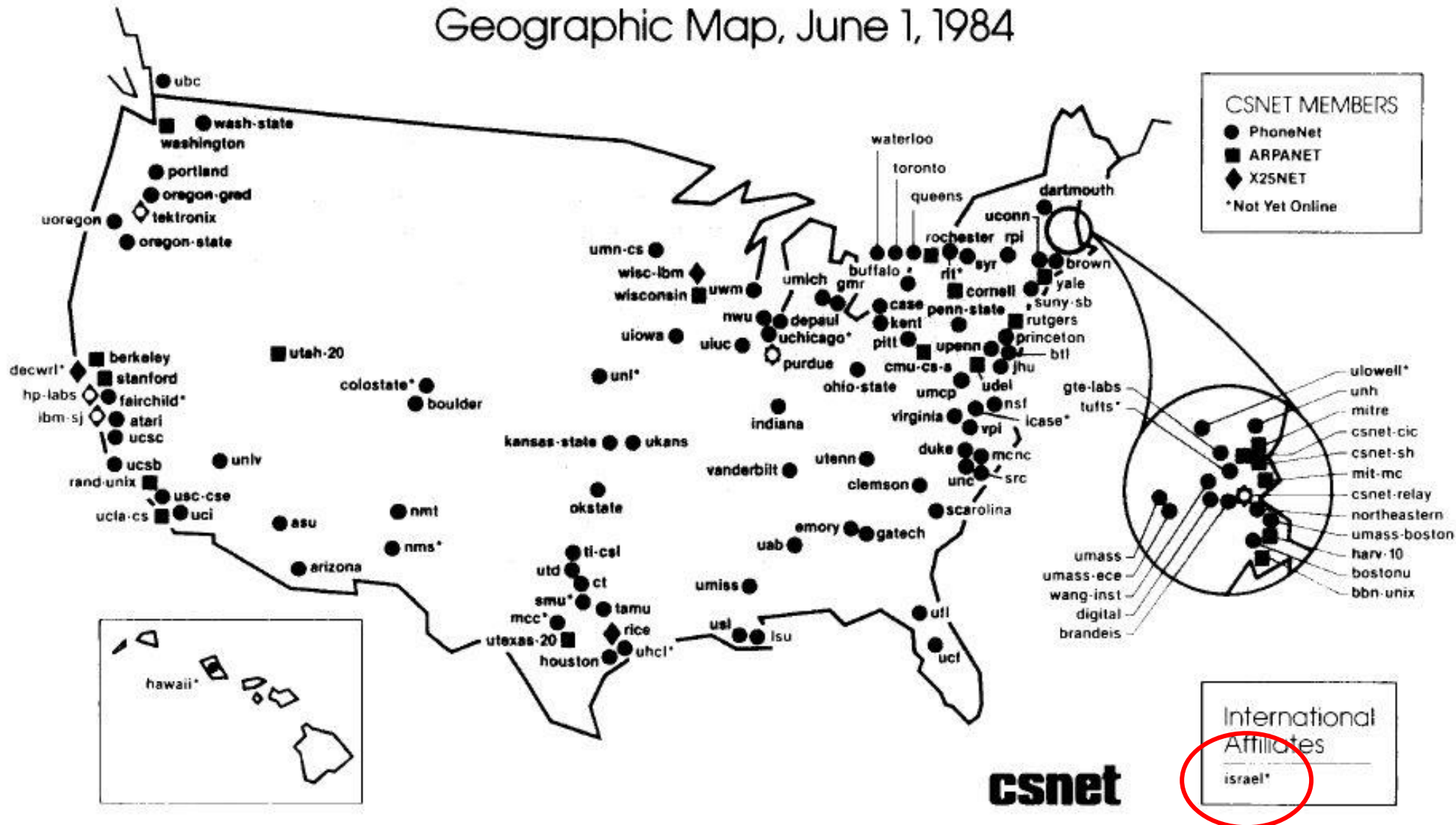
Hank Nussbacher

Tel Aviv

June 2010

Internet precursors

□ **Csnet – April 1984**

  ○ **9.6kb IP/x.25 connection**

□ **Bitnet/EARN – August 1984**

  ○ **9.6kb leased line to Europe**

□ **Email access to Internet hosts via gateway in USA**

Geographic Map, June 1, 1984

Csnet

- **Israel first international affiliate**
- **9.6Kb X.25 link to CSNET via HUJI**
  - **On demand connection**
- **Full Internet (TCP/IP) access to CSNET X.25 Internet hosts**
- **IP access to Arpanet/Internet hosts not permitted - DARPA policy**
  - **Policy relaxed in 1986**
  - **Israel becomes part of Arpanet - 1989**
- **Email (CSNET/Arpanet – Israel) via HUJI and CSNET gateways**
- **Prof. Shmuel Peleg and Danny Braniss**

1 City University of New York, USA	05/05/81	
2 Yale University, USA	05/05/81	
3 Pennsylvania State University, USA	10/02/81	
4 New Jersey Educational Computer Network, USA	01/19/82	
5 Brown University, USA	01/20/82	
6 Cornell University, USA	02/06/82	
7 Princeton University, USA	03/29/82	
8 Columbia University, USA	05/03/82	
9 Rockefeller University	06/01/82	
10 Boston University, USA	06/06/82	
11 University of California at Berkeley, USA	07/18/82	
12 University of California at San Francisco, USA	07/27/82	
13 Massachusetts Institute of Technology, USA	08/05/82	
14 University of Rochester, USA	08/25/82	
15 State University of New York/Binghamton, USA	09/08/82	
16 Harvard University, USA	09/16/82	
70 IBM Israel Scientific Center, Haifa, IL	08/13/84	
71 Technion - Haifa, IL	08/13/84	
72 Haifa University, IL	08/13/84	
73 Tel Aviv University, IL	08/13/84	
74 Weizmann Institute of Science	08/13/84	

Bitnet

**The first Bitnet
& EARN connections**

EARN

INTERNATIONAL LINES

Internet and int'l circuits

- **July 1989 – MACHBA orders the first int'l 56kb link to Nysernet in USA**

- **Sept 1989 – Bezeq informs Machba that a 56kb link will not be available for another 10 months**

  - **MACHBA orders a 9.6kb link**

  - **Bezeq informs MACHBA that MACHBA has to find a US carrier for the other half – MCI is selected in Feb 1990**

- **June 26, 1990 – 9.6kb leased line Internet link to USA becomes operational**

Int'l advocates

- Larry Landweber
- Richard Mandelbaum
- Ira Fuchs
- Mel Ciment

אוגוסט 1990
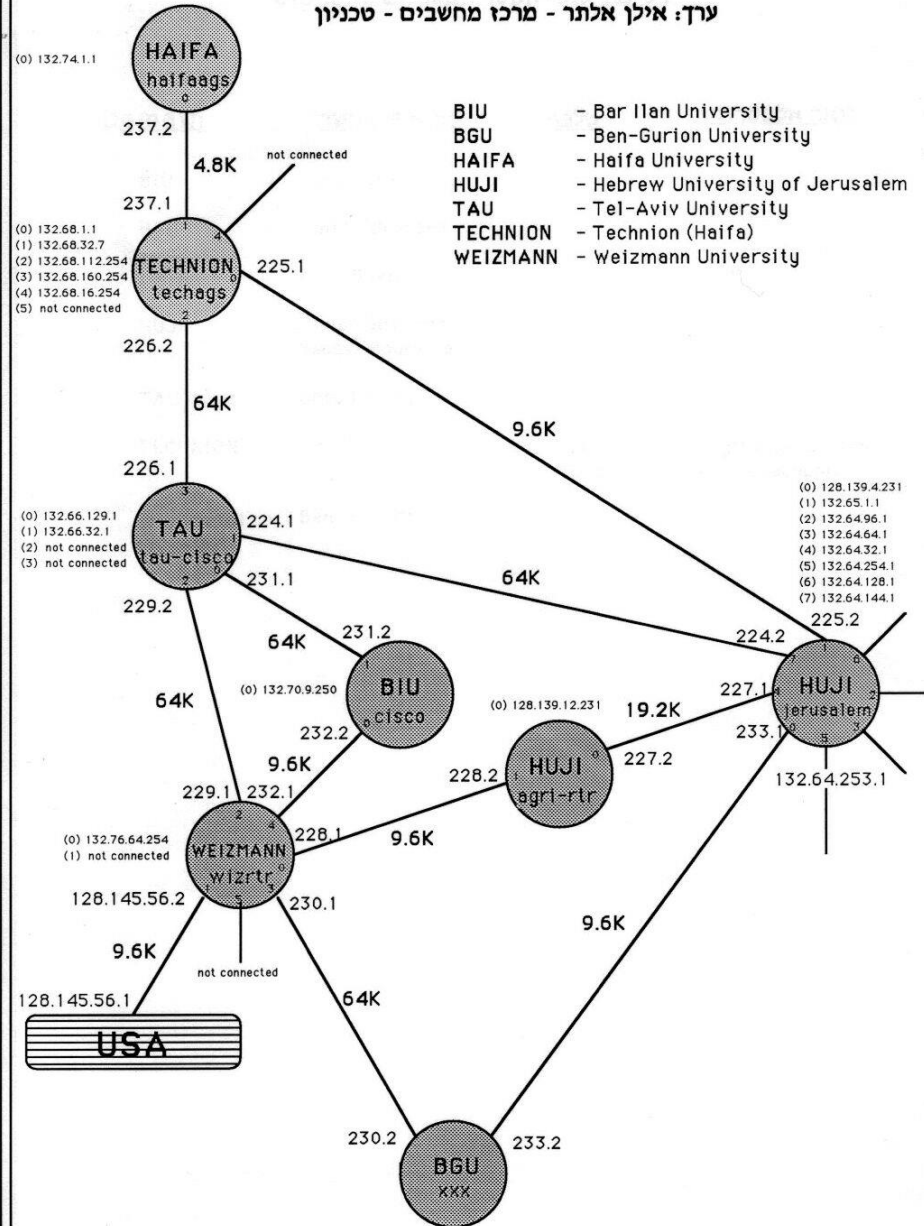Ver: 1.0

מפת רשת התיקשורת הארצית
(128.139.XX.XX)

ערך: אילן אלתר - מרכז מחשבים - טכניון

BIU — Bar Ilan University
BGU — Ben-Gurion University
HAIFA — Haifa University
HUJI — Hebrew University of Jerusalem
TAU — Tel-Aviv University
TECHNION — Technion (Haifa)
WEIZMANN — Weizmann University

HAIFA
haifaags

(0) 132.74.1.1

237.2

4.8K

not connected

237.1

TECHNION
techags

(0) 132.68.1.1
(1) 132.68.32.7
(2) 132.68.112.254
(3) 132.68.160.254
(4) 132.68.16.254
(5) not connected

225.1

226.2

9.6K

64K

226.1

TAU
tau-cisco

(0) 132.66.129.1
(1) 132.66.32.1
(2) not connected
(3) not connected

224.1

231.1

229.2

(0) 128.139.4.231
(1) 132.65.1.1
(2) 132.64.96.1
(3) 132.64.64.1
(4) 132.64.32.1
(5) 132.64.254.1
(6) 132.64.128.1
(7) 132.64.144.1

64K

64K

224.2

225.2

BIU
cisco

231.2

(0) 132.70.9.250

232.2

(0) 128.139.12.231

19.2K

227.1

HUJI
jerusalem

233.1

132.64.253.1

HUJI
agri-rtr

228.2

227.2

64K

9.6K

229.1

232.1

228.1

9.6K

WEIZMANN
wizrtr

(0) 132.76.64.254
(1) not connected

128.145.56.2

230.1

9.6K

not connected

128.145.56.1

9.6K

64K

9.6K

USA

230.2

233.2

BGU
xxx

Int'l links

☐ **March 1991 – 64kb satellite link via Bezeq is made operational**

☐ **Oct 1991 – 64kb link to Europe via Bezeq is made operational**

☐ **Jan 1993 – 128kb satellite link via Israsat**

☐ **Jan 1994 - Sat link to US upgraded to 256kb**

☐ **Nov 1994 – Link to Europe upgraded to 128kb**

☐ **Jun 2010 – 2x 2.5Gb to Europe**

How ISPs got started in Israel

- ☐ **June 1991 meeting with Ministry of Science, Ministry of Trade and Ministry of Communications to convince MACHBA to allow commercial companies access to this "Internet" thing**
  - ☐ **MACHBA requests self-limitation in license for only R&D companies as well as education**
- ☐ **Gov't continues to try to convince MACHBA to handle not only leased line companies but also dialup.**
  - ☐ **Feb 20, 1992 – MACHBA turns down gov't to handle dialup users and recommends that gov't issue licenses for companies to be formed**
  - ☐ **Gov't accepts MACHBA's view and issues at end of 1992 the first ISP licenses to Actcom, Dataserv and Netmanage**

The birth of Israeli ISPs

- **Inter-ministry committee decides which companies can connect to MACHBA**
  - **During 1992-1994 - 50 companies allowed to connect to MACHBA and hundreds to the new ISPs**
- **May 1994 – MoC grants open ISP licenses to Elron, Darcom, and Netmanage**
- **1995 – 5 ISPs exist – Elron, Netvision, Actcom, Shani and Dataserve**

The first connections to the Internet

- 1. KavManche connected on Dec 7, 1992 (9.6kb)

- 2. IEC connected on Dec 9, 1992 (9.6kb)

- 3. Open U upgraded to 19.2kb on Mar 3, 1993

- 4. E&M Michshoov connected on Mar 7, 1993 (9.6kb)

- 5. BRM connected on Mar 8, 1993 (9.6kb) [BRM later became Checkpoint]

- 6. Datasrv connected on Mar 21, 1993 (64kb)

- 7. RAD connected on Mar 22, 1993 (19.2kb)

- 8. BezekZahav connected on Apr 23, 1993 (19.2kb)

- 9. Fibronics connected on May 4, 1993 (19.2kb)

- 10. Lanoptics connected on May 4, 1993 (9.6kb)

- 11. Applied Materials connected on May 4, 1993 (9.6kb)

- 12. Aleph Yissum connected on May 12, 1993 (9.6kb)

- 13. Onyx connected on May 23, 1993 (9.6kb)

- 14. Actcom connected on June 10, 1993 (9.6kb)

- 15. Bahai World Center connected on July 1, 1993 (64kb)

- 16. Netmanage connected on July 21, 1993 (19.2kb)

http://www.interall.co.il/israel-internet-connections.html

Cisco vs Lannet

- **Yehuda Zisappel pushed a new Bynet box called a "brouter"**
  - **LANNET**

- **The academic network wanted a new box called Cisco**

- **In the end we purchased the first Cisco AGS+ routers in Israel in 1989**

IIX

- Gov't informs MACHBA that all commercial companies have to be disconnected by May 1996

- Dec 31, 1995 - ISOC-IL decides to create an Israeli Internet Exchange modeled after similar US based systems

- The IIX is born

*.il domains

- **Decided on co.il, ac.il, org.il, etc. in 1992**
- **More formalized rules published in 1996**
- **The 1st Israeli domains**
  - **All universities: huji.ac.il, tau.ac.il, bgu.ac.il, etc. – July 1990**
  - **Commercial**
    - iec.co.il – July 1992
  - **Amutot**
    - matimop.org.il – Oct 1993
  - **ISP**
    - actcom.net.il – Oct 1994 (bought out by Bezeqint)
  - **School**
    - misgav.k12.il – June 1995 (gone)
  - **Municipal**
    - ladpc.gov.il – July 1995 (changed to ladpc.co.il)

Internet Pioneers

- **Prof Shmuel Peleg**
- **Danny Braniss**
- **Jo van Zwaren**
- **Doron Shikmoni**
- **Yehuda Zisapel**
- **MK Miki Eitan**
- **David Kaminitz**
- **Avi Cohen**
- **Hank Nussbacher**
- **Georges Meyer**
- **Morty Taragin**
- **Yehavi Bourvine**
- **Dov Winer**
- **Rafi Hoyda**
- **Zvi Ilani**